



May 14-16, 2019, 07:30-18:00 in Building 3, Moffett Field, Mountain View, CA

Opportunity: At our third workshop, we continue to use partnerships to accelerate UAS-deployed sensors to fill important National observational gaps. By approaching these challenges with a whole-of-Government team, we leverage successes within our Agencies to accelerate our national UAS enterprise, and we focus group resources on shared challenges and new opportunities. With this workshop, we also explore how to respond to rapidly evolving emergencies like volcanic eruptions, wildfires and hurricanes, and how to use new tools like AI to accelerate the rapid exploitation of UAS data.

TUESDAY, MAY 14

07:30-08:30	Registration, Coffee, Mounting Posters
08:15-08:30	Welcome, Eugene Tu , Center Director NASA Ames
08:30-09:00	Welcome, Rob Pappas , Manager, FAA Integration Office
09:00-09:30	Workshop goals and outline

Theme 1: Federal Agency Updates

Speakers from Federal Agencies below will update the audience on UAS policy issues, operational challenges and upcoming opportunities that we could or need to collaborate on.

09:30-09:45	Matt Fladeland, NASA: UAS at NASA
09:45-10:00	Phil Hall, NOAA: NOAA UAS Program Priorities
10:00-10:20	Coffee break and poster discussion
10:20-10:35	Gary James, NSF: Managing UAS Expectations at the Bottom of the World
10:35-10:50	Jean Pan, USN: UAS in the Navy: At Sea and Ashore

11:05-11:20 Victor Wilhelm, USACE: *USACE Applications with Small UAS*
 11:20-11:35 Chris Stewart, FEMA: *Leveraging UAS for Emergency Management and FEMA Applications*
 11:35-11:50 Paul Fleitz, USAF: *Air-Launched UAS: Current and Potential Applications*
 11:50-13:00 **Lunch onsite**
 13:00-13:15 Ana Greene, EPA: *EPAs UAS Policy Development*
 13:15-13:30 Brad Quayle, USFS: *US Forest Service UAS Program Overview*
 13:30-13:45 Kathleen Venhaus, NGA : *NGA UAS for Next Generation GEOINTGA UAS Projects*
 13:45-14:00 Ajay Amlani, DIU: *UAS Priorities for DIU*
 14:00-14:15 **Coffee break**
 14:15-14:30 Raymond Hunt, Jr., USDA-ARS: *USDA ARS: Applications with Small UAS*
 14:30-14:45 James Gray, FHWA: *UAS to Support Surface Transportation*
 15:00-15:45 *DOI Panel with* Matt Bobo, BLM; Scott Bishaw, FWS; Jeff Sloan, USGS; Lukus Monette, OSM
 15:45-17:30 **Poster session and mixer in Mezzanine and Fireside Lounge**

WEDNESDAY, MAY 15

08:15-08:30 Welcome and logistics (Bruce Quirk, John Stock, Matt Fladeland)

Theme 2: UAS for Science and Emergency Operations: Lessons and Opportunities from the Kilauea Response *Using Kilauea as a case study to explore the challenges and opportunities of responding to natural disasters with UAS, focusing on opportunities for joint action.*

08:30-09:00 Angie Diefenbach, USGS: *Overview of DOI-USGS UAS response to Kilauea eruption*
 09:00-09:30 Ryan Perroy, UH: *UH Hilo and university partners UAS response to Kilauea eruption*
 09:30-09:45 Brad Koeckeritz/Steve Stroud, OAS: *DOI Rapid response capabilities – T&E Aircraft, Emergency COA, airspace deconfliction, rapid payload integration*
 09:45-10:00 Anna Stull, USGS: *UAS Support of the Hawaii FEMA Housing Mission (1)*
 10:00-10:15 Forrest Lanning, FEMA: *UAS Support of the Hawaii FEMA Housing Mission (2)*
 10:15-10:30 Jason Marinaeu, DOI: *Interagency management during the Kilauea eruption*
 10:30-10:50 **Break**
 10:50-11:50 ***UAS for Science and Emergency Operations Panel***, led by Anna Stull, USGS
 11:50-13:00 **Lunch**

Theme 3: Breakouts

13:00-16:30 Proposed Breakout sessions with leads

1. **13:00-13:10 New sensors** needed for UAS borne science (Led by John Stock, USGS, in Ballroom)
 - a. **13:10-13:50 Atmosphere: Gas and particulate sensors**
 1. **Air Emission Sensor Needs** - Brian Gullett, EPA

2. [Science Requirements for UAS measurement of gas emissions in natural settings](#) - [Kristen Manies, USGS](#)
- b. **13:50-14:50 Ground: Surface deformation and sub-surface**
 1. [SRI CubeSat Imaging Radar for Earth Science \(SRI-CIRES\): Initial UAS Flight Demonstrations](#) - [Lauren Wye, SRI](#)
 2. [UAV-based software-defined radar sensors for environmental monitoring](#) - [Sam Prager, USC](#)
 3. [Next-generation aeromagnetic maps using UAS](#) - [Geoff Phelps, USGS](#)
- c. **14:50-16:10 Rivers: Non-contact estimation of water depth and surface velocity**
 1. [USGS Water Mission Observing needs](#) - [Jack Eggleston, USGS](#)
 2. [UAS-based remote sensing of river systems: Applications, challenges, and opportunities](#) - [Carl Legleiter, USGS](#)
 3. [sUAS Ground-Penetrating Radar System for Non-Contact Bathymetry of Freshwater Systems](#) - [Cian Dawson, USGS](#)
 4. [QCam, a UAS-based radar for measuring real-time surface water velocity](#) - [John Fulton, USGS](#)

2. Tribal opportunities- John "JC" Coffey, Executive Director, Unmanned Systems Cherokee Nation & Founder of the Unmanned Systems Tribal Interest Group, in Macon Room

- a. [Cherokee Nation, Tribal Interest Group Update, FAA Integrated Pilot Program and the FAA Re-Authorization Act - Tribal Inclusion](#) - [John "JC" Coffey](#)
- b. [GIS / UAS training to Native American students and Tribes within SIPI's Geospatial Information Technology Program](#) - [Dennis Dye: BIE-sponsored](#)
- c. [ESRI Tribal Support - Story Boarding](#) - [Anne Taylor, ESRI Federal Account Manager - Tribes, USDA, DOI](#)
- d. [Flight Safety support of STEM for Native American students](#) - [Jennifer Birdsong, Flight Safety International](#)
- e. [FEMA UAS Future & Tribal Opportunities](#) - [Travis Potter, FEMA IV](#)

Panel Discussion - with all.

3. **Successful workflows** (Led by Jeff Sloan in Northwing)
 - a. [UAS LiDAR sensors, considerations and processing workflows](#) - [Mark Bauer, USGS](#)
 - b. [UAS Radiometric Sensor Calibration and Geometric accuracy assessments](#) - [Matt Burgess - Jeff Sloan, USGS](#)
 - c. [UAS Data Management & Data Archive](#) - [Ryan Longhenry, USGS](#)

4. Grass-roots topics, Fireside Lounge

16:30-17:30 In door [Flight demonstrations in NASA UAS Experimental Hangar Next Door.](#)

THURSDAY, MAY 16 – INDUSTRY DAY

08:15-08:30 Welcome and logistics (Bruce Quirk, John Stock, Matt Fladeland)
 08:30-09:00 Richard Pisarski, NASA: SBIR, A tool for New Capabilities

Theme 4: Update on High Altitude Long Endurance platforms

09:00-09:30 [Matt Fladeland, NASA: *Science and operational requirements for HALE*](#)
 09:30-10:00 Paul Brooks, Prismatic
 10:00-10:30 Peter De Baets, AeroVironment

10:30-10:50	Break
10:50-11:20	<u>Chris Ellsworth, Aurora</u>
11:20-11:50	<u>Discussion</u>
11:50-13:00	Lunch

Theme 5: AI applied to UAS Data

13:00-13:30	<u>Ariel Seidman, Hivemapper:</u> <i>Automated creation of 3D Maps and Change Detection for analytics from video</i>
13:30-14:00	<u>San Gunawardana, Enview:</u> <i>3D Geospatial AI for Disaster Response</i>
14:00-14:30	<u>Glady Singh, PrecisionHawk:</u> <i>Title</i>
14:30-15:00	<u>Michael Burshteyn, CryptoMove,</u> <i>UAS security: Moving Target Defense</i>
15:00--17:00	Scheduled & On-demand Breakout sessions at Spacebar

Macon Room:	SBIR opportunities with Bill Toscano and Richard Pisarski
Northwing:	Emergency Response Opportunities with Angie Diefenbach